

CLAIMS

1. A suspension stop for a motor vehicle wheel of the type comprising a fixed member intended to be fixed to the chassis (2) of the vehicle and a rotating member intended to be fixed to the suspension spring (4) so as to be rotationally moved under the effect of the forces exerted by the said spring, the said stop being characterised in that it comprises a device for measuring the vertical forces applied to the vehicle wheel, the said device comprising a pulse-generating coder (11) which is fixed to one of the members, a sensor (12) fixed to the other member which is able to detect these pulses so as to determine the angular position of the rotating member with respect to the fixed member, and a calculation means able, from this position, to calculate the corresponding vertical force applied.
2. A stop according to Claim 1, characterised in that it comprises a bearing provided with a fixed top race (1) forming the fixed member, a rotating bottom race (3) forming the rotating member and rolling bodies (5) disposed between the said races.
3. A stop according to Claim 2, characterised in that it comprises a top cup (6) associated with the top race (1) and intended to be associated with the chassis (2), and a bottom cup (7) associated with the bottom race (3) and provided with a housing (8) intended to fixedly receive the end of the spring (4).
4. A stop according to Claim 3, characterised in that the sensor (12) is associated with the top cup (6) so that the sensitive elements of the sensor (12) are positioned opposite to and at an air gap distance from the coder (11).
5. A stop according to Claim 2 or 3, characterised in that

the sensor (12) is associated with the top race (1) so that the sensitive elements of the sensor (12) are positioned opposite to and at an air gap distance from the coder (11).

5 6. A stop according to any one of Claims 1 to 3, characterised in that the sensor (12) is associated with the chassis (2) so that the sensitive elements of the sensor (12) are positioned opposite to and at an air gap distance from the coder (11) when the stop is mounted on the said chassis.

10 7. A stop according to any one of Claims 2 to 6, characterised in that the coder (11) is associated with the bottom race (3).

15 8. A stop according to any one of Claims 3 to 6, characterised in that the coder (11) is associated with the bottom cup (7).

9. A stop according to any one of Claims 3 to 6, characterised in that the bottom cup (7) comprises a part on which the coder (11) is produced.

20 10. A stop according to any one of Claims 3 to 9, characterised in that the bottom (7) and top (6) cups comprise extensions (7d, 6c) which cooperate so as to form a static sealing means.

25 11. A stop according to any one of Claims 3 to 10, characterised in that the coder (11) and/or the cups (6, 7) comprise extensions (11a) which rub on one face of the stop so as to form a dynamic sealing means.

30 12. A stop according to any one of Claims 1 to 11, characterised in that the sensor (12) comprises sensitive elements chosen from amongst Hall effect sensors, magnetoresistors and giant magnetoresistors.

13. A stop according to any one of Claims 1 to 12, characterised in that the coder (11) is formed from a multipole magnetic ring made from synthetic material containing ferrite particles on which there are magnetised a plurality of pairs of North and South poles equally distributed with a constant angular width.

14. A method of measuring vertical forces applied to a wheel associated with the chassis (2) of a motor vehicle by means of a stop according to any one of Claims 1 to 13, in which, in addition to the angular position of the rotating member, the steering angle of the wheels and/or the value of the extent to which the suspension is pressed down are used by the calculation means.